

WILL TEST ROTOR SHIP ON CHARLES RIVER VERY SOON

Is Invention of Two Students
In Naval Architecture
Course at Tech

MAY ATTAIN SEVEN KNOTS

Contrary to Flettner Ship, Uses
But One Rotor Tower As
Propellant

What is said to be the first test of a rotor ship in the United States, will take place on the Charles River Basin within two weeks, when a ship of this type, constructed by two naval officers, members of Course XIII will have its first trial.

The designers of the rotor towers are Lieutenants W. W. Hastings Sp. and J. M. Kiernan '25 of the United States Navy, both of whom are students in the Naval Architecture department. Data gathered in exhaustive experiments conducted at Langley Field, Va., is being used in the construction of the rotor towers, which differ somewhat from the towers invented by Anton Flettner of Germany. The principle of operation of the two is the same, both utilizing the so-called Magnus effect, which involves the force obtained by wind pressure on revolving cylinders.

To Use High Speed Rotors

Contrary to the Flettner ship, but one tower will be used on the ship to be tested in the Basin, which tower will be 3½ feet in diameter and 9½ feet in height, and will be mounted in a vessel about 30 feet in length. Until recently Flettner has used two rotors, ten feet in diameter and 52 feet high in a ship of 600 tons.

Although smaller than those on the foreign ship, the rotors on the craft designed at Technology will revolve at great speed. The designers believe that by rotating their tower at 360 revolutions per minute in a 15 mile wind, the 30 foot boat will attain a speed of seven knots an hour. The tower is mounted on a ball bearing base and is supported by an inner column with a bearing several feet above the deck.

Contrary to the impression in many quarters the rotors are not connected in any way to the propellers of the ship. The power of propulsion is obtained entirely by the force set up by pressure of air current on the revolving mast, which is turned by a small motor at the base.

OIL PAINTINGS ARE TO BE REMOVED THIS WEEK

Plan To Reexhibit Pictures at
All-Technology Reunion

Professor R. T. Haslam '11 stated that the paintings now on exhibition in the main lobby would be taken down some time this week. When asked what value these pictures have in advertising the work of the chemical engineer, he stated that they are not being shown so much for advertising purposes as they are for their art value. According to Professor Haslam, these pictures are a means of letting people know of the development work in the gas industry. It is told in this artistic manner instead of in pamphlet form.

The pictures will probably be on exhibition again during the All Technology Reunion, although that is not yet definitely settled. The American Gas Association is loaning this collection to various schools and colleges for exhibition.

CIVIL ENGINEERS HOLD BANQUET THIS EVENING

H. P. Eddy '17, of the engineering firm of Metcalf and Eddy will be one of the speakers at the Civil Engineering Society Banquet this evening. Eddy is the author of several books, among them a textbook on hydraulics.

Professor C. M. Spofford '93, of the Civil Engineering Department and Professor H. W. Tyler of the department of Mathematics will also speak at the banquet. The results of the Societies elections, held Monday, will be announced.

NO SUMMER COURSE IS NOW REQUIRED IN X-B

Three of Practice Schools Have
Secured New Quarters

It has been announced by the Chemical Engineering Department that the institution of the two-term system will necessitate a change in the schedule of Course X-B, Chemical Engineering Practice. Beginning this summer there will be no summer school in this course between the third and fourth years as was heretofore required. During the first three years, the course will coincide with Course X, but in the fourth year, after pursuing studies at the Institute till January 1, the men will be sent to the practice schools for the remainder of the year.

A new club-house has been secured for the men doing practice work in plants at Bangor, Maine, which is larger and better-adapted to the needs of the students than the former house. It will be ready for use for the men who go up to Bangor in the summer course starting July 6. New club houses have recently been put into use at the Buffalo and Winchester practice schools.

SENIOR PICNIC TO BE AT PEMBERTON

Races, Canoe Tilts and Field
Events Will Feature
Annual Frolic

Pemberton will once again be the scene of the graduating class picnic, to be held on Saturday, June 13, and according to the members of the Picnic Committee, plans are being completed to make this affair the most popular of the Senior Week events.

Members of the class will assemble in the Great Court at 8:30, at which time "appropriate and distinguishing costumes will be handed out to enhance the spirit of the carefree abandon which is expected to characterize the day." It is believed that a sufficient number of noise makers will also be distributed to insure plenty of joyous Technological tooting on the exodus from the Institute grounds.

Special cars, representing the cherished antiques of the Boston Elevated company, are now being assembled from all the spare parts available. If sufficient employees of that transportation company are inveigled into risking their lives on the wrecks, the former trolley cars will be dragged up Massachusetts Avenue

(Continued on Page 4)

BOWMAN SPEAKS AT FIRST MEETING OF SILVER BAY MEN

A. D. Phillips of Harvard and
H. R. Greatwood '25 Are
Other Speakers

LANTERN SLIDES SHOWN

"Silver Bay has an effect on the mind like ploughing a field in the spring and letting it grow," declared Professor H. L. Bowman '14 of the Civil Engineering Department, in addressing the first Silver Bay meeting yesterday afternoon in room 10-250. Professor Bowman was the Faculty representative to Silver Bay two years ago and in his talk pointed out the advantages to be gained from attending the coming conference.

Following his talk lantern slides of the last conference and country surrounding the Silver Bay region of Lake George were shown and explained by H. R. Greatwood '25. An address by A. D. Phillips, newly-elected president of the Harvard Christian Association, concluded the program.

To Hold "Stunt Night"

Phillips declared the conference essentially religious. "Man must," he explained, "take a little time off to put himself right. It is good to get where all are in a spirit of friendship. The idea of Silver Bay is living life at its best not 'churchy'—but getting the most out of life. You need to know how to live. At Silver Bay one can arrive at his own conclusions free from the traditional taints."

With the slides Greatwood proved that all is not work at the conference. The many opportunities for athletics were shown as well as slides of "Stunt Night" when the various delegations adorn themselves in "foolish, funny, or fancy" costumes to provide mutual entertainment. Trips may be taken to historical Fort Ticonderoga as a yacht which docks at the conference grounds.

Of the Institute men who are now planning to attend the conference a good many intend to travel by the "hitch and hike" method, riding when they can and walking when they must. It is possible to make arrangements for the T. C. A. to meet half of the \$40 cost of the trip. To date 13 men from the Institute have announced their intention of attending the conference while Harvard is already sure of 25 representatives. Last year the Technology delegation outnumbered the one from Harvard.

Crew Coach to Finish Season With Columbia



Coach "Bill" Haines

LOWELL STUDENTS GRADUATE TONIGHT

I. E. Moulthrop Is Chief Speaker
—Open House Night Will
Follow Exercises

There are 121 men in the class which graduates from Lowell Institute this evening at 8:15 in room 10-250. Professor C. F. Park, Director of Lowell Institute, will preside at the exercises and the chief outside speaker of the evening will be I. E. Moulthrop of the Edison Electric Illuminating Company.

Mr. Moulthrop, being assistant head of the construction department, has direct charge of all construction which the Edison Co. undertakes and will give a brief non-technical account of the erecting of the large power plant at Weymouth which he directed. Professor E. F. Miller '86, head of the Mechanical Engineering Department, will represent the Institute at the exercises, Dr. Stratton being unable to attend. The diplomas will be presented by Dr. A. L. Lowell, president of Harvard University and Trustee of Lowell Institute.

Following the graduation exercises there will be an "open house" night for the benefit of the Lowell men and their friends. The various laboratories will be open and in operation as they were at the recent Open House Night and there will be the same exhibits as there were at that time.

ALUMNI WILL WITNESS INSTITUTE AT WORK

Reunion Program to Start With
Tour of Inspection

An Alumni "Open House" is a part of the program planned for the All Technology Reunion on June 11 and 12. Immediately after registering on the morning of the eleventh student guides will conduct visitors on a tour of the Institute buildings.

Each department head will arrange one or more special demonstrations covering the latest developments in the department's field of activity. Special attention is to be given to the new laboratories which the Institute has acquired in the past few years.

One of the special exhibits will be the new laboratory of Metallography, which is now credited with having equipment excelled only by two others in this country. The work that the laboratory is doing in the analysis of defective materials—rails, castings, automobile parts—will be emphasized because it is of interest to so many of the Alumni who are in the manufacturing industries.

Bursar Ford, who is in charge of the arrangements for the first day, will give his talk on "The Development of Recreational Facilities," illustrated with the same slides that he used at the All-Technology Smoker last fall. The film showing the work of the School of Chemical Engineering Practice will be ready and will have its first showing during the "Technology at Work" program.

HAINES TO COACH CREW AT COLUMBIA FOR SHORT PERIOD

Denies Press Statements to the
Effect That Shift Is
Permanent

WILL COACH TECH IN FALL

Will Prepare Blue and White
Crew for Poughkeepsie
Regatta in June

Bill Haines, rowing coach at Technology, leaves for New York this week to take charge of the Columbia crews, in order to prepare them for the Poughkeepsie regatta. In a statement yesterday, Haines wished it understood that the change was only temporary, and that he would be back at the Institute upon the conclusion of the Columbia season.

Statements in the Boston Press implying that the shift to Columbia is permanent were in error, as Haines has no idea at the present time of breaking his relations with the Institute. Within two years he has brought the Engineer crews to prominence in the rowing world, and seems entirely satisfied with the support that he has received.

Columbia Season Disastrous

Bill Haines has concluded his duties at the Institute for the present season and is at present preparing the crews of the Union Boat Club for participation in the American Henley regatta to be held Saturday in Philadelphia. Following this engagement, he will go to New York to take charge of the Blue and White crews for the remainder of the season.

The appointment of the Engineer mentor comes as a sequel to Fred Miller's resignation as coach of the Columbia crews, following one of the most disastrous seasons that the New York college has experienced.

Haines has less than a month to get the Columbia eight into working order for the regatta on the Hudson, but he feels that the material with which he will work has much promise and can be improved materially under a different system of coaching. When the Institute crews met the Blue and White recently, Haines had a fine opportunity to look over the New York crew.

ALDRED TALK SERIES CLOSED FOR THE TERM

No Booklet of Year's Lectures
Will Be Published

Announcement that no more Aldred Lectures are scheduled for the year has been made by Professor Vannevar Bush '16, who is co-operating with Mr. Aldred in the presentation of the talks. Contrary to the custom of previous years no booklet of the lectures presented during the year will be printed.

The lectures this year were the second of the five yearly series arranged for by J. E. Aldred, the founder of the lecture courses. Throughout his varied career, Mr. Aldred has come into contact with so many different phases of industrial and business life, that he has established these lectures in order to give the graduates of the technical colleges throughout the country an opportunity of gaining some foresight in some of the problems they will have to face when they enter the field of active industry.

One of the greatest achievements of Mr. Aldred's career was the development of the Shawinigan Falls project on the St. Maurice River, Quebec, in which he became interested through his business as banker. This project was one of the greatest in Canada and was a great factor in developing Eastern Canada.

CALENDAR

Wednesday, May 27

12:00—Automotive lecture in room 3-270.
6:30—Civil Engineering Society banquet in Walker.

8:15—Lowell Institute Graduation exercises in room 10-250.

Thursday, May 28

12:00—Automotive lecture in room 3-270.

Friday, May 29

10:00—Automotive lecture in room 3-270.

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MILITANT HONESTY FOR EXAMINATIONS

TO prevent conditions under which a man is abandoned to a moral contest is the purpose of examination supervision; it is not an inference of lack of trust. The proctoring system which is in use here is intended as just such a preventative, but something of a decadence, of a growth of leniency has crept in and the system has not functioned as thoroughly as it might. Two factors are to be blamed; a certain student insensibility to the importance of correctly conducted examinations and a lack of rigidity and efficiency in the proctorial system.

The faculty, as indicated in the accompanying communication, is making efforts to remedy defects in the system of proctoring. It remains for the students to assist in these efforts for improvement by lending their militant support, by complying wholeheartedly and cooperatively with whatever regulations and changes are made to effect a more wholesome situation.

The point which has not been realized fully enough is the inequitable condition which arises from dishonest practices. Men who have a sense of probity, who conduct themselves properly are not on an equal basis with those students who are disreputable, and this inequality assumes serious proportions when there is prevalent cheating. Setting an accurate standard of scholarship under conditions of flagrant cheating is impossible, passively allowing dishonest practices to continue fosters moral insufficiencies in weak men, closing our eyes to the acts of men with no sense of moral responsibility tends to place us in their same low category. So it is a matter of standards, of institutional and personal integrity which makes it imperative that the student body lend its assistance in making examinations fair and wholesome.

Reproaches for illegitimate practices have become trite from too much harping, but the need for improvement is still existent; it is time for action rather than talk, and it is sincerely hoped that the utmost success crowns the efforts of the faculty to eliminate the insufficiencies now prevalent.

EVOLUTION IN TENNESSEE

WHEN on March 21 Governor Peay of Tennessee signed the Butler anti-evolution measure, few realized how important this bill was destined to become.

In every recent general session of the state legislature some sort of an evolution bill has been presented. So in January of this year when representative Butler presented a bill little was thought of it—until it passed in the House by a large majority and three weeks later in the Senate by an overwhelming vote. This measure stated that, "It shall be unlawful to teach any theory which denies the story of the divine creation of man and to teach instead that man descended from a lower order of animals." Even the governor apparently did not realize its importance for he approved it—"as a protest against an irreligious tendency to exalt so called science and deny the Bible . . . Probably the law will never be applied . . ."

But no sooner had the bill been passed when a controversy arose. Prominent men took up each side. Finally Professor J. T. Scopes of the Dayton, Tennessee, High School agreed to make a test case and violated the measure. He was arrested and brought before the County Grand Jury last Monday where he was indicted. In charging the jury Judge Raulston said, "If you find that the statute has been violated you should indict the guilty party promptly. You will bear in mind that in this investigation you are not interested to inquire into the policy or wisdom of this legislation."

When Scopes is tried on July 10, the case will be watched with widespread interest. Nationally known lawyers will conduct the case. It is no longer merely a matter of the violation of a state statute but one of educational freedom. It does not matter whether evolution is right or wrong. What does matter is whether or not teachers can tell their classes what they themselves believe, and whether or not students can learn what they will and interpret facts as they wish. Has a state legislature the power to prevent students from having scientific theories and the beliefs of scientists brought before them? Is a state legislature justified in thus taking upon itself the responsibility of passing upon the value of the investigations of well, intelligent, well known, scientists?

THE OPEN FORUM

To the Editor:

There seems to be definite evidence to show that the conditions surrounding the examinations at the end of our terms are not what we desire them to be. The Faculty is endeavoring to improve these conditions, notably by remedying defects in the system of proctoring. Their objective is to establish a procedure which will enable every student to do himself full justice, and to eliminate, so far as may be, unfair advantages gained through questionable methods. No permanent improvement can, however, be made unless there is hearty cooperation on the part of all concerned. As chairman of the committee of the Faculty which is dealing with this problem, and on their behalf, I beg to ask, through your columns, the cordial assistance of the student body in making our examinations wholesome and fair, and in keeping with the best traditions of the Institute.

(Signed) H. P. Talbot '85

To the Editor:

The students of Brown exercised the right which most of us have been brought up to regard as (in spite of much contrary evidence) guaranteed us by the Constitution and other American Institutions; namely, "freedom of speech and the press." They merely expressed to Mr. Bryan their lack of desire to listen to him any longer. It might be regarded as significant that he understood the language they spoke.

Since there is such a large proportion of the population of our country which still remains under Mr. Bryan's influence, after all these years, it is a source of great comfort to read that some group among us has expressed its disapproval in such unequivocal terms.

(Signed) J. Alston Clark '18

As We Like It

COPLEY

A man whose former sweetheart committed suicide on his wedding day and sent a letter which fell into the hands of his bride announcing her intention, and who is reminded of the fact every day for twenty years, must have some excuse to get out of the house at night without being accused of seeking another similar escapade. And of course a "lodge meeting" of the Masonic lodge is a perfectly good excuse.

It works fine for twenty years, and then his son-in-law tries the same gag. And their mutual anxiety each to keep the other ignorant of the fact that he is not really a member make the farce "Are You a Mason," by Leo Ditrichstein, now playing at the Copley Theatre, so screamingly funny that it has held its popularity for a good many years.

Two girls whose mother opposes their marriage, a mother-in-law who is very much disliked by her daughter's husband but who has the money he needs, a friend who wants help in getting into the Masonic lodge, a blackmailing "ham actor", and a man who really is a Mason add the complications necessary to keep the action moving continuously from the start to the final curtain. J.H.M.

ST. JAMES

The Boston Stock Company bids farewell to Boston with the presentation of "The Show Shop" at the St. James Theatre this week. This week will not only be the last of the fourth season of the stock company, but also the last of its existence.

"The Show Shop" is a side splitting comedy of theatrical life written by James Forbes and in choosing this as the last engagement for the local players, Manager Giles has been exceedingly fortunate. There is an extraordinarily large cast and all of the favorites have a bit to play to remember them to Boston audiences.

The plot is not important, suffice it to say that every one seems to be doing his best to make the play one of the best ever presented by the stock company. Miss Hitz is remarkably entertaining as Bettina Dean, who is more bent on marriage than a stage career but is forced to follow the way of the footlights by a persistent mother. Bernard Nedell as Jerome Belden, the prospective husband, gives an excellent performance.

Entertaining roles fall to Louis Leon Hall, Anna Layng and Ralph Remeley. Houston Richards and Olive Blackney are cast in part which leave a pleasant memory to the audience.

Special features are being introduced during this last week of the company's existence, with personal appearances by leading members of the company. On the opening night, Houston Richards and Roberta Lee Clark stepped before the footlights in a novelty act. Other performances have been distributed among the rest of the company. C.E.M.

Important Experiments Are Being Made In Physical Chemistry Research Laboratory

By Dr. L. B. Smith,
Department of Chemistry

In 1903, Professor A. A. Noyes, with the co-operation of Professor Willis R. Whitney, founded a laboratory at the Massachusetts Institute of Technology for physical chemical research. This, in spite of the fact that the work of an American, Willard Gibbs, had already laid the foundation for physical chemistry, marked the real entrance of America into this important field. Dr. Noyes and his co-workers first concerned themselves with the study of the properties of solutions, and their publications soon won them world-wide recognition among scientific men.

In 1907 Dr. Noyes became acting president of the Institute, and until the inauguration of President MacLaurin in 1909, Professor G. N. Lewis was director of the laboratory. Under Professor Lewis the methods of electromotive force measurements were applied to the solution studies. In the ensuing years numerous problems of equilibria, reaction rate and related subjects were investigated and many important papers were contributed to the scientific journals.

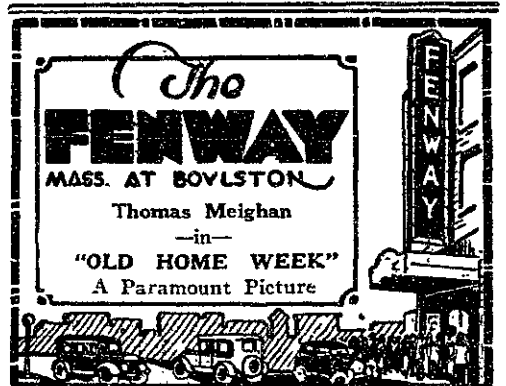
Is Training School for Leaders

In 1910 Dr. F. G. Keyes joined the laboratory staff and soon started his researches on the thermodynamic properties of different chemical substances and his studies of an equation of continuity.

Perhaps the most notable fact associated with the past development of the Research Laboratory of Physical Chemistry is that it has served as a training school for leaders in the fields of scientific endeavor. As outstanding figures, in addition to those already named, may be mentioned such men as W. D. Coolidge of the General Electric Company, C. A. Kraus of Brown University, E. W. Washburn of the National Research Council, John Johnston of Yale, M. S. Sherrill of M. I. T., R. C. Tolman of the California Institute of Technology, and W. D. Harkins of the University of Chicago. In fact, it is scarcely too strong a statement to say that most of the real leaders in the field of physical chemistry in America have, at some time or other, been associated with the Research Laboratory of Physical Chemistry or with the men who went out from it.

Professor Keyes Assumes Charge

In 1920, Professor Noyes left the Institute to assume the duties of director of chemical research at the California Institute of Technology, and Professor Keyes was appointed director of the research laboratory at M. I. T. Under the able direction of Dr. Keyes, the laboratory has expanded the scope of its work and added largely to its equipment of general and special apparatus. In the matter of personnel, the laboratory has gained several members of faculty grade. At the present time there are six faculty members on the staff, namely Professors Keyes, Whitney (non-resident), MacInnes (on leave), Gillespie, Beattie, and Scatchard. In addition there are research associates and assistants and graduate students to a total of about fifteen.



The work in progress in the laboratory may be divided roughly into five parts, namely: (a) investigations on the thermodynamic properties of chemical substances; (b) chemical equilibria and heats of reactions; (c) studies of solutions of electrolytes; (d) reflection of X-rays by crystals, and (e) photochemistry. For each type of work much special equipment is available. A large proportion of this special apparatus has been developed in the laboratory as need has arisen and has been constructed in its own shops. A few examples of the available equipment are as follows:

Several units of highly refined design for measuring the pressure-volume-temperature relations of chemical substances over wide ranges both of temperature and pressure.

Apparatus for gas thermometry and the determination of the absolute temperature scale.

Several different types of calorimetric apparatus including a constant flow liquid calorimeter for measuring heats of neutralization and dilution.

Apparatus for studying chemical equilibria and the mass action law at high pressures, including constant temperature baths, pressure gages and special analytical devices.

Electrical equipment for measuring potentials of galvanic cells and conduct-

(Continued on Page 4)

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CAPTAIN RUSSELL IN N. E. TENNIS FINALS

Tech Captain Defeats Marsh Intercollegiate Champion

Playing the best tennis that he has uncovered this year, Captain Joe Russell of the Technology tennis team went into the finals of the New England by his defeat of Clifford Marsh, last year's champion. As a result of his victory, he will meet Frank Osgood, stellar captain of the Dartmouth team, in the finals this morning. Russell dropped his first set to Marsh 6-4, continually overdriving the baseline due to the slow conditions of the courts after the rain.

At the beginning of the match, Russell started his driving game, and quickly dropped the first four games. He recovered, however, and took four of the next five games. Marsh won the set at 6-4. Seeing that his driving tactics were not having the effect they should, Russell changed to a forehand chop to the Williams man's backhand, followed by a quick rush to the net. His volleying was all that could be desired and he quickly rushed through the next set at 6-2.

This same type of game was continued in the third set, giving him the set at 6-1. Whenever Russell had his back to the sun, he sent up high lobs that gave Marsh no end of trouble. He pressed this advantage to the limit and scored point after point on such strokes. His rush carried him through to 4-2 in the fourth set.

This was the decisive point of the match and Russell rose to the occasion. In the seventh game Marsh broke through Russell's service and continued his advantage on his own. In the eighth game he was within a point of tying the set on his own serve. Russell, however, withstood the challenge and with several well placed shots won the game and went

into the lead 5-3. Russell then proceeded to take his own serve at love to win the set 6-3.

The doubles cup that Tech won last year will find another possessor this year as Russell and Hinck lost in the second round to the Dartmouth team of Osgood and Boyd. In the first round, the Tech pair easily defeated Amherst in straight sets. Hinck played a good game in the doubles, but losing his serve on several occasions caused the undoing of the Institute team.

In the first round Capt. Russell defeated Dodge of Holy Cross in love sets, 6-0, 6-0, and repeated with almost as easy a victory in the second round, going into the semi-finals by beating Slack, Tufts, 6-0, 6-1. Russell's tactics in tournament play are to play every point for all it is worth and not to loaf even against an easy opponent. This idea produced the scores above. He received little opposition in either of the matches, being perfectly familiar with the indoor courts where the players were driven by the rain, and swept through to complete victories.

(Continued on Page 4)

PHI KAPPAS WIN FROM A. T. O. AND GRAB BALL TITLE

Hard Fought Battle Results In 8-7 Score—Last Inning Decides Game

In a game replete with thrills and heartbreaking moments, Phi Kappa defeated the Alpha Tau Omega baseball team last night 8-7. A. T. O. led up to the beginning of the ninth inning when Phi Kappa pushed over three runs on a combination of a walk, a hit batter and a couple of hits and errors. Upon until the fatal ninth, Cook, the A. T. O. pitcher had been pitching fine ball, keeping the P. K. hits in general scattered.

Cook started the ninth in a promising manner when Merewether and Murphy fled out. Mahoney then came through with a single and the trouble started. McCarthy walked and Macleod was hit by a pitched ball. Little Gus Cotter then came through with the hit that decided the ball game. He shot a double through second that scored three men, winning the game.

Rhinehart Pitches Good Ball Riley playing second for the A. T. O.'s was the star of the game in the field, making two one-handed spears that cut off sure hits. He also had a good day at bat, getting two hits and scoring two runs in his two times at bat. Crocker playing left garden pulled down several pretty catches that were labeled for extra bases if they had gone by him.

Rhinehart pitched a good game for Phi Kappa, pitching especially fine ball in the pinches. Several bad errors at various stages of the game got him in trouble on several occasions. In the eighth and ninth when he sensed victory, he rose to the occasion and retired the A. T. O. team without a run. He went into the end of the ninth with a one run lead, which he held by retiring Leonard, Soche, and Crocker in rapid order.

Fahey playing center field for P. K. got the longest hit of the game when he drove a home run over against Building 2. Cook played good baseball when he walked Art Merewether three of the times he was at bat. If he had ever put one over with men on bases, there would have been a fine chance to break up the ball game in the early innings.

A. T. O. made their way into the finals by their defeat of the Dekes in a closely fought game, while Phi Kappa was defeating the Phi Gamma Dels.

(Continued on Page 4)

I. C. 4-A CONTEST COMES AS CLIMAX TO TRACK SEASON

Drew, Leness, Sanford, Brodsky and Glantzberg Entered for Technology

MANY COLLEGES ENTERED

Coming as a fitting climax to the Technology track season will be the 49th annual intercollegiate track and field championships which will be held at Philadelphia on Saturday. This meet is the biggest event in the world of trackdom, representatives coming to it from all over the country. Men are entered from every college prominent in the running game.

It is not as yet definitely decided who the Technology entrants will be but from all indications Chink Drew, George Leness, Major Sanford, Fred Glantzberg, and Saul Brodsky will answer the call on Saturday. Coach Eddie Farrell of Harvard has announced that there will be about 20 Crimson men present at the meet. Headed by Captain Henie Dunker, the Harvard outfit includes such noteworthy performers as Soapy Watters, winner of the half mile last year and a man who will give George Leness plenty of trouble in that event, having beaten the Engineer once this spring.

Boston College, who tied with Bowdoin last Saturday at the New England, has entered eight men. Lermond, the two-miler who came out first last Saturday, Murphy in the high hurdles, McManus in the hammer, and Captain Tom Cavanaugh are the "Men from the Heights" who are expected to place.

Holy Cross, while she has not as yet announced her entries, has several men who without a doubt will be entered. They are Leo Larrivee and Captain Joseph Tierney. Larrivee was the man who finished second to Leness last Saturday in his thrilling 880 yard run. Larrivee was also the winner of the mile. Tierney raced to a new record of 48 4-5 s. in the double furlong at the meet last Saturday and any man who can cover the 440 in that time will have to be reckoned with.

Bowdoin will probably send her star weight man "Duke" Charles and in all probability he will be up among the leaders in the discus, having broken the New England Intercollegiate record in the hurling of the Grecian platter.

It is earnestly hoped that Captain Chink Drew of the Tech outfit will return to form for the hammer throw

MANAGEMENT OF CREW AND TRACK ANNOUNCED

Field and Bigelow Chosen As Major Sport Managers

Managements for two of the major sports at the Institute have recently been announced by the Executive Council of the M.I.T.A.A. J. H. Field '27 has been announced as manager of track to succeed W. C. Sessions '26. G. D. Jackson '27 has been elected manager of Cross Country. H. A. Burnell '28 and W. J. Slagle '28 are the newly elected assistant track managers. F. W. Sammis '28 was elected freshman track manager.

Managers of crew for the coming year have also been announced. R. M. Bigelow '27 has been chosen to succeed G. S. Frisbie '26 as manager of crew. D. E. Perry '28, and A. Wharton '28 were announced as assistant managers. A. S. Dempewolf '28 was elected manager of the Sophomore Field Day crew for next fall.

Both Field and Bigelow have been out for the management of track and crew since their freshman year. Bigelow was Secretary of the Class of 1927 during his freshman year and is a member of Beaver.

on Saturday. It was just a year ago this time that Chink came out on top in the hammer event and if he could only repeat this year, there would be much joy in "Doc" Connors camp.

George Mittelsdorf the Colby ace will without a doubt be present but his chances in the sprints look very dubious with such men as Al Miller and Russell of Cornell.

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Poor Condition Has Handicapped Track Team During Past Season

Now that the track season is practically over, the members of the undergraduate body at the Institute are not backward in expressing their disappointment at the more or less poor showing made by the track team this season. Three such overwhelming defeats as the Engineers suffered at the hands of Princeton, Cornell and Harvard were not taken very bravely by the students. Alumni, undergraduates, and almost everyone connected with the Institute felt badly at the outcome, and the track management has been severely censured, perhaps justly so, for arranging these three meets with the strongest teams in the East on successive Saturdays. The coaches, themselves, have expressed dissatisfaction with the schedule.

Without a doubt there will be no such schedule arranged next year. The A. A. has already signed contracts to meet Cornell and Harvard on Tech Field in 1926, but the third meet will probably be with a smaller college in place of Princeton, in order to give the majority of the team members a taste of victory. It is said, that the team morale had utterly collapsed before the season was half over, because of the unreasonably stiff schedule arranged by the management. A lighter schedule will undoubtedly help build up this all important feature of team strength.

Handicapped By Training Methods
Then again there seems to be much speculation as to the reasons why last year's stars failed to come through again this year, that is, besides those athletes who were laid low by the numerous injuries that seemed to be so prevalent among the stand-bys of the team, and prevented them from scoring for their Alma Mater the whole season.

An internationally known runner famous before entering Tech, won the Technique cup for the heaviest scoring of the 1924 season. Though this athlete defeated some of the fastest sprinters in the East last year he failed to even compete for the Institute in most of the meets of the past season. In those that he did enter he did in a very mediocre fashion, appearing to have lost all that ability for which he was famous. It is possible that he is not able to do his best under American methods of training as it is so radically different from the method used in English universities. The captain-elect of the cross country team failed to report for spring work even though he realized, as well as any one in the Institute, that the distance runs were pitifully weak. Much more discussion on this subject is best left unsaid.

Condition of Men Poor
If pulled tendons and muscles can be called "breaks" then the team did get it in the neck every time. The run of "luck" started in the interclass meet when Bud Cole, the best broad jumper on the team and an ace in both sprints and over the low hurdles, pulled a muscle that kept him on the sidelines for the rest of the year. At the Penn games, where the relay teams made a very creditable showing, Lou Porter, a seasoned sprint veteran and an even

time man in both dashes, pulled a muscle.

Two weeks later Spud Miller, the freshman sprinter, pulled a tendon in practice. This string of injuries, coming so close after each other, was taken as a bunch of hard luck. But the climax was reached in the New England, when Lou Porter's injury came back on him in his trial heat of the 220; Al Kauzman, second only to Porter in the sprints, pulled a tendon in his semi-final heat of the 220 as he was sure of qualifying for the final; and Forte, Tech's only hope in the broad jump, pulled a tendon in his first jump Saturday.

(Continued on Page 4)

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GENERAL BREWSTER TO CONDUCT REVIEW

Competitive Drill Will Precede Ceremony—Medals to Go to Winners

General A. W. Brewster, in command of the First Corps Area, is to take charge of the annual freshman review this year, which will be held on the parade grounds between the Educational Building and Walker Memorial next Wednesday, at 4 o'clock. It will continue until between 6 and 7 o'clock. The command of the Battalion is to be entirely in the hands of the student officers, one of whom will be major of the unit.

The review will be preceded by a competitive drill in which all students who are regularly enrolled in MS-13 are eligible to participate. Three medals, of gold, silver, and bronze, will be given to the three men whom the judges shall consider best in the drill, based upon the "School of the Soldier," Colonel Browning of Harvard, Colonel Creig from the Army Base, and Major Drollinger of Boston University are to act as judges in this event.

The Massachusetts Institute of Technology Chapter No. 9, Reserve Officers Association will present the Battalion with a new standard of colors on next Monday. Colonel Miller '86, president of the chapter, will make the presentation.

PRESIDENT STRATTON ATTENDS CONFERENCE

President S. W. Stratton left for New York last night to attend a conference of the members of the Corporation living in New York City. He will return this evening.

The conference will meet for luncheon in the Bankers Club at noon for the purpose of discussing the question of the "Relations of the Massachusetts Institute of Technology and Industry."

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Captain Russell In Finals



(Continued from Page 3)

Hinck put up a good but losing fight against another seeded player in the initial round, dropping his match to Mills Baker of Williams. His game was working better than it has for quite a while and he gave his opponent considerable trouble, but the Williams' player had too much experience for him and pulled out a victory.

Cliff Marsh of Williams, last year's champion advanced to the semi-finals by defeating Boyd of Dartmouth and Merenski of Brown.

POOR CONDITION HURTS RUNNERS THIS SEASON

(Continued from Page 3)

day, after qualifying for the final Friday afternoon.

Of course the consistent, sterling work of George Leness, Hank Steinbrenner, Major Sanford, and Captain Chink Drew, gave track enthusiasts some good cheer, but hardly eclipsed the team's weaknesses. These men will quite deservedly go down in the Institute history as great athletes and will always remain shining examples of athletic prowess.

Many Candidates Drop Out

It seems that at the beginning of the year some very excellent material reported to the track house, but it is said that injuries and other such breaks have caused team failure.

By semi-official figures 109 men substituted track for physical training. Of this number approximately 40 men stayed out after the five weeks' period was ended. The remainder, comprising the majority, could not be prevailed upon to stay out and try for the team. Various reasons were given. There seemed to be a unanimous feeling that the coaches had remarkable personalities, but failed to give their attention to individuals other than the selected few. These criticisms probably referred to the field events rather than the track events, as it is very trying for the coach to run back and forth across the field to see what each man is doing

within the same time. However, it was generally agreed that a few of the managers were most unaccommodating and tried to make themselves as disagreeable as possible.

Surely, between the management and others in charge, there was anything but a winning combination in evidence. An entirely new training system has been installed, and with a turnover in management, and the former establishment of this coaching system, Technology is sure to have a more successful track team. With the addition of the freshman luminaries to the Varsity squad, the coaches should have pretty fair material from which to select a strong team, and their work will again be eagerly watched by Tech men throughout the country.

SENIOR PICNIC TO BE HELD AT PEMBERTON

(Continued from Page 1)

to the Institute. Here they will undertake to transport the carefree Seniors to Rowe's Wharf via the most roundabout route. If tradition is upheld, traffic will be likewise upheld, probably around the busiest business section of Washington Street and thereabouts. At the Wharf, the wheeled chariots will be abandoned and the Seniors will wander over the wild waves, trusting to one of the efficient launches of the Nantasket Steamship Company.

Arriving in Pemberton, the class will assemble for a group picture before the commencement of the Picnic Day exercises. Scores of interesting events are on the program arranged by the committee. Among other things there will be a multitude of races, including a greased pig race, an obstacle race, relay races, and swimming races. The customary canoe tilts and a score of field events are also expected to claim a large toll.

NOTICES

OFFICIAL

PHOTOGRAPHY COURSE

On account of the large number of requests, a course in photography (8:16 and 8:161) will be offered during the summer session commencing June 23. All who plan to register for either the lectures or the laboratory are requested to inform Professor Hardy (Room 4-304) as soon as possible in order that the necessary supplies may be ordered in advance.

UNDERGRADUATES

EH THEMES

Students who took English and History with the class of 1925 may get their themes in room 2-285.

INSTITUTE COMMITTEE

There will be a special meeting of the Institute Committee in the faculty Dining Room at 5 tomorrow afternoon.

COSMOPOLITAN CLUB

Cosmopolitan Club elections will be held between 4 and 5 on Friday in room 10-267. All members are requested to vote.

TECHNIQUE

The Technique office will be open every afternoon after 5 to deliver books. Books reserved by signups, but still unclaimed will be put on sale tomorrow.

BEAVERS MANAGERS

There will be a meeting of all "Beavers" managers and players in Room 8-105 at 4 this afternoon. Everyone must be present, as plans for having pictures taken are to be discussed at this time.

COMBINED PROFESSIONAL SOCIETIES

New members of the Combined Professional Societies will meet in room 3-312 on Friday at 5. Every member is urged to be present for the last meeting of the year.

IMPORTANT WORK NOW BEING DONE

Physical Chemistry Laboratory Has Served As Leaders' Training School

(Continued from Page 2)

ances of solutions of electrolytes, also a special cell for experiments under high pressures.

High power X-ray tubes, transformers, and a modified Bragg apparatus for measuring the intensity of reflections from crystals.

A quartz prism spectrograph and high frequency discharge apparatus for studying the radiation characteristics of chemical substances. In addition to the above, the laboratory has a well equipped shop with a skilled mechanic in charge. There are also facilities for constructing much of the special glass apparatus used in the laboratory.

A small plant furnishes liquid air for low temperature measurements and plans are under consideration for a much larger plant and also for equipment to produce liquid hydrogen. When these plans are realized, many important low temperature investigations can be undertaken.

Research Work Supplements Theory

The research work being carried on at the present time is largely supplemental to theoretical studies having to do with the fundamental properties of matter, though a number of the problems are being undertaken primarily for the immediate practical results to be obtained. In this latter class may be mentioned researches now in progress on the Haber equilibrium at high pressures, and on the pressure-volume-temperature relations of steam at high temperatures and pressures. This steam research is being financed by the American Society of Mechanical Engineers and represents but a portion of that society's comprehensive steam program.

Perhaps most important of the theoretical studies is that of Professor Keyes and his associates, directed toward the development of an equation of continuity which shall make it possible to apply to specific cases of non-ideal substances, the general thermodynamic treatment so completely worked out by Gibbs. Of hardly less importance are the studies seeking to determine the laws governing the properties of solutions. The X-ray and radiation researches are aiding in theoretical studies of the constitution of matter.

The members of the staff of the Research Laboratory of Physical Chemistry from time to time offer advanced courses in thermodynamics, kinetic theory, quantum theory, atomic structure, colloidal chemistry and related topics. The result is a well rounded department of graduate study and research where the student of ability who desires to work for a higher degree will find every opportunity to fit himself for many of the better positions in educational or industrial work.

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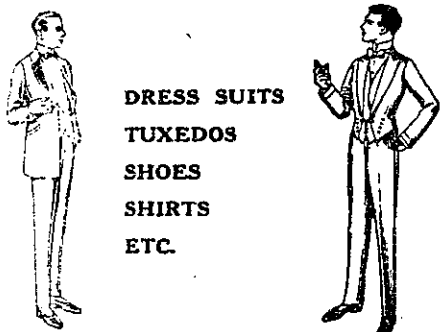
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